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August 19, 2013

Mr. Nanjunda Gowda Work Assignment Manager U.S. Environmental Protection Agency 77 West Jackson Boulevard Chicago, IL 60604

Subject:

Letter Report

Ellsworth Industrial Park – Operable Unit 1 Downers Grove, DuPage County, Illinois

Technical Direction Document No.: S05-0008-0710-019

Document Control No.: 320-2A-BIRD

Contract No.: EP-S5-06-04

Dear Mr. Gowda:

The Weston Solutions, Inc. (WESTON®), Superfund Technical Assessment and Response Team (START) prepared this letter in accordance with the tasks outlined in Technical Direction Document (TDD) No. S05-0008-0710-019. The letter serves to present additional information related to the Soil Screening Level (SSL) calculations for the migration to groundwater pathway for Operable Unit 1 (OU1) of the Ellsworth Industrial Park (EIP) (the Site). The Draft Remedial Investigation (RI) Report, Revision 0 (WESTON, 2009) previously presented the SSL calculations. Relevant information related to the SSL calculations is included as Attachments to this letter. Attachment A provides the alluvial aquifer potentiometric surface map. Attachment B provides revised Tables I-1 and I-2. Attachment C provides relevant boring logs. Attachment D provides a geologic cross-section location map and cross sections E-E', H-H', and K-K'. The information provided in the attachments was previously included in the Draft Remedial Investigation (RI) Report, Revision 0 (WESTON, 2009).

The hydraulic gradient was calculated using groundwater elevations obtained in February 2007 from monitoring wells screened within the alluvial aquifer. Based on the potentiometric surface presented on Figure 3-10 (Attachment A), it is apparent that flow through the alluvial aquifer is complex and varies widely across the Site. The flow gradient along the western portion of the Site is less than across the eastern portion. In an effort to obtain an average flow rate for the entire Site, the hydraulic gradient was calculated in the western, central, and eastern portions of the Site. Additionally, it is noted that the magnitude of the flow gradients presented is fairly consistent. A range of hydraulic gradients from 0.018 to 0.049 feet per foot (ft/ft) is within the expected range of flow for a complex aquifer system with heterogeneous conditions.

Table I-1 (Attachment B) presents the site-specific SSLs for the migration to groundwater pathway for Site contaminants of concern that were calculated using the site-specific hydraulic conductivity. Table I-2 (Attachment B) presents the calculation of the site-specific hydraulic conductivity using the geometric mean. The wells used to calculate the Site hydraulic



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Mr. Nanjunda Gowda EPA, Region 5

-2- Ellsworth Industrial Park – Operable Unit 1 August 19, 2013

conductivity for the alluvial aquifer were selected based on the lithology encountered in the well borings. Relevant boring logs are included in **Attachment C** and geologic cross-sections are included in **Attachment D**. Wells screened entirely, or predominantly in coarse-grained materials (sands and gravels) were included in the calculation whereas wells screened in predominantly fine-grained materials (silts and clays) with minor sand/gravel lenses were not included in the calculation. The hydraulic conductivity of the excluded wells is not believed to be representative of the alluvial aquifer as the hydraulic conductivity is limited by the predominance of the fine-grained materials.

If you have any questions or require additional information, please feel free to contact me at (773) 315-1959.

Sincerely, WESTON SOLUTIONS, INC.

Joseph Ruiz

WESTON START Project Manager

Attachments:

A – Potentiometric Surface Map

B – Tables I-1 and I-2

C – Boring Logs

D – Geologic Cross Sections

cc: WESTON START DCN File



Mr. Nanjunda Gowda EPA, Region 5

-2- Ellsworth Industrial Park – Operable Unit 1 August 19, 2013

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ATTACHMENT A POTENTIOMETRIC SURFACE MAP



ATTACHMENT B TABLES I-1 AND I-2

Table I-1

Calculation of Soil Screening Levels for the Migration to Groundwater Pathway Ellsworth Industrial Park Site Downers Grove, Illinois

Equation 10 - Soil Screening Level Partitioning Equation for Migration to Ground Water (Soil Screening Guidance: User's Guide, July 1996) SSL (for migration to groundwater) = $Cw * |Kd + (\theta w + \theta a * H')/\rho b|$

Chemical	Groundwater Objectives - MCLs	DAF	Cw	Koc	Adjusted foc	Kd	θw	θа	ρb	Н'	Migration to Groundwater SSL
	(mg/L)	(unitless)	(mg/L)	(L/kg)	(g/g)	(L/kg)	(L/L)	(L/L)	(kg/L)	(unitless)	(mg/kg)
Primary Chlorinated Solv	ents										
1,1,1-Trichloroethane	0 2	114	2.27E+01	110	0.011	1.19	0.3	0.13	1 5	0.705	3.3E+01
Tetrachloroethene	0.005	114	5 68E-01	155	0.011	1.68	0.3	0.13	1.5	0 754	1.1E+00
Trichloroethene	0 005	114	5.68E-01	166	0.011	1 80	03	0 13	1.5	0 422	1.2E+00
Secondary Chlorinated Se	olvents			_							
1,1-Dichloroethane	4	114	4.54E+02	316	0.011	0.34	0.3	0 13	1.5	0 23	2.6E+02
1,2-Dichloroethane	0 005	114	5.68E-01	17.4	0.011	0.19	0.3	0.13	1.5	0.0401	2.2E-01
1,1-Dichloroethene	0 007	114	7.95E-01	58.9	0.011	0.64	0.3	0.13	1.5	1.07	7.4E-01
cis -1,2-Dichloroethene	0.07	114	7.95E+00	35.5	0 011	0.39	0.3	0.13	1.5	0.167	4.8E+00
trans -1,2-Dichloroethene	0.1	114	1.14E+01	52.5	0.011	0.57	0.3	0.13	1.5	0.385	9.1E+00
Carbon tetrachloride	0 005	114	5 68E-01	174	0.011	1.89	0.3	0.13	1.5	1.25	1.2E+00
Vinyl chloride	0.002	114	2.27E-01	18.6	0.011	0.20	0.3	0.13	1.5	1.11	1.1E-01

Equation 11 - Derivation of Dilution Factor (Soil Screening Guidance: User's Guide, July 1996) $DAF = 1 + (K^*i^*d)/(I^*L)$

K (m/yr)	i (m/m)	d (m)	I m/yr	L (m)	DAF (unitless)
	•				
4100	0.036	4.80	0 14	45	114

Equation 12 - Estimation of Mixing Zone Depth (Soil Screening Guidance: User's Guide, July 1996)

 $d = (0.0112*L^{2})^{0.5} + da * [1 - exp[(-L*I) / (K*i*da)]]$

da	L	I	K	i	d
(m)	(m)	(m/yr)	(m/yr)	(m/m)	(m)
7.6	45	0 14	4100	0 036	4 80

References:

Soil Screening Guidance: User's Guide (U.S EPA 1996c)

Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (U.S. EPA 2002)

35 IAC 742 - TACO (IEPA 2007a)

Notes:

da = aquifer thickness (m), value of 7.6 m (25 ft) used to approximate overall alluvial aquifer thickness.

L = source length parallel to groundwater flow (m), default value of 45 m is used and is based on a square area of 0.5 acres

I = Infiltration rate (m/yr), default value of 0 14 m/yr used - representative of Glacial Till Over Outwash - Table 6 (U.S. EPA 1996c)

K = hydraulic conductivity (m/yr); geometric mean of K values from slug tests performed in alluvial aquifer - see Table I-2 for data and calculation

1 = hydraulic gradient (m/m); average of gradients shown on Figure 3-10.

d = mixing zone depth (m); calculated by Equation 12.

DAF = dilution attenuation factor; calculated by Equation 11.

Cw = target soil leachate concentration (DAF * GW-objective) (mg/L)

GW-objectives used are U.S EPA's Maximum Contaminant Levels

GW-objective for 1,1-DCA is from TACO, Appendix B, Table F. Values Used to Calculate the Tier 1 Soil Remediation Objectives for the Soil Component of the Groundwater Ingestion Route

Kd = soil-water partitioning coefficient (Koc * adjusted-foc) (L/kg)

Koc = soil organic carbon/water partition coefficient (L/kg), chemical specific, TACO Appendix C, Table E.

foc = fraction organic carbon, site-specific; see Table I-3

adjusted foc = see Table 1-3 for data and calculation of adjusted foc.

 θ w = water-filled porosity (Lwater / Lsoil), default value = 0 3

 $\theta a = air\text{-filled porosity (n - }\theta w) \text{ (Lair / Lsoil); default value} = 0.13$

n = 1 - (9b/9s) = 0.43

 $\Phi b = dry soil bulk density (kg/L), default value = 1.5$

 $\Re s = \text{soil particle density (kg/L), default value} = 2.65$

H' = dimensionless Henry's law constant, chemical specific; TACO Appendix C, Table E

Table I-2

Supporting Data for SSLs - Alluvial Aquifer Hydraulic Conductivity Data Ellsworth Industrial Park Site Downers Grove, Illinois

Location ID	Well Screen Location Lithology	Groundwater Classification	Hydraulic Conductivity - Falling Test (cm/s)	Hydraulic Conductivity - Rising Test (cm/s)	Mean Hydraulic Conductivity (cm/s)
Study Area B					
EIP-MW188I	Sand/gravel	Alluvial Aquifer	NA	7.69E-02	7.7E-02
EIP-MW192I	Sand/gravel	Alluvial Aquifer	4.99E-03	1.25E-03	3.12E-03
EIP-MW193I	Silty clay/clayey silt and sand/gravel	Alluvial Aquifer	0.1135 ¹	4.74E-03	4.74E-03
Study Area C					
EIP-BD5I	Silt and sand/gravel	Alluvial Aquifer	5.36E-04	9.04E-04	7.20E-04
EIP-MW272I	Sand/gravel	Alluvial Aquifer	9.30E-03	3.04E-02	1.98E-02
EIP-MW273I	Sand/gravel	Alluvial Aquifer	7.37E-02	0.2312	1.52E-01
EIP-MW194I	Sand/gravel and silty clay/clayey silt	Alluvial Aquifer	4.40E-04	1.25E-03	8.46E-04
EIP-MW195I	Sand/gravel and silty clay/clayey silt	Alluvial Aquifer	9.77E-03	2.14E-02	1.56E-02
EIP-MW196I	Sand/gravel	Alluvial Aquifer	1.85E-03	4.56E-03	3.20E-03
EIP-MW197I	Sand/gravel and silty clay/clayey silt	Alluvial Aquifer	9.67E-04	4.73E-04	7.20E-04
EIP-BD7I	Sand/gravel and silty clay/clayey silt	Alluvial Aquifer	8.14E-03	6.90E-03	7.52E-03
EIP-BD6I	Sand/gravel	Alluvial Aquifer	1.13E-03	1.23E-03	1.18E-03
Study Area G				2	
EIP-MW242I	Sand/gravel and silty clay/clayey silt	Alluvial Aquifer	8.64E-03	3.41E-03	6.02E-03
EIP-LD1I	Silt, sand/gravel	Alluvial Aquifer	3.54E-02	1.81E-02	2.67E-02
Study Area L					
EIP-MW257I	Sand/gravel and silty clay/clayey silt	Alluvial Aquifer	3.22E-02	1.14E-02	2.18E-02
EIP-MW259I	Sand/gravel	Alluvial Aquifer	1.72E-02	4.85E-03	1.10E-02
EIP-MW260I	Sand/gravel	Alluvial Aquifer	8.12E-02	4.36E-02	6.24E-02
Study Area Other (OU1 ar	nd OU2)			3	
EIP-BD4I	Silt and sand/gravel	Alluvial Aquifer	6.94E-05	7.75E-05	7.35E-05
	Geometric Mea	an of Hydraulic C	onductivity - A	lluvial Aquifer:	1.3E-02

Notes:

Shaded values were not used to calculate the geometric mean of hydraulic conductivity for the SSLs. These values represent screened intervals where only a portion of the screen intersects a clean sand and gravel, or where the screen intersects interbedded fine and coarse grained lithology.

1 Difference between falling and rising head tests exceeded one order of magnitude; only rising head test results considered representative of actual soil conditions

cm/s = Centimeter per second

ID = Identification

OU = Operable Unit

NA = Not applicable; based on professional judgment, the data were not interpretable

Sources:

Bouwer, H., and R.C. Rice. 1976. "A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells." *Water Resources Research*. Volume 12, Pages. 423 through 428.

Bouwer, H. 1989. "The Bouwer and Rice Slug Test - An Update." Ground Water. Volume 27, No. 3, Pages. 304 through 309.

ATTACHMENT C BORING LOGS



(Page 1 of 3)

I	1			SOLU	TION	1 S 811				(Page 1 of 3)
		Elk	sworth Ind Downers WW	Grove	ark		Start Date Finish De Driller Drilling M Total Dep	ele : 5/31/02 : Boart Longyear lethod . Rotosonic	ESTON Geo	ologist . B. Crawford
	Depth in feet	Samples	recovery (ft)	blow counts	(In).	GRAPHIC	nscs	DESCRIPTION	PID (ppm)	Well: BD-4I Elev.:
	0		1'					FILL; organic topsoil, dry to moist, roots throughout.	0	Concrete
	2-] 4-		1				FL	FILL; brown organic mix of sand/gravel/ clay, dry to moist.	0	
1	6-		2.5				GC GC	CLAY; brown, moist, with gravel, medium to high plasticity. GRAVEL; with some clay, mostly dry.		
	8-		2.5				GP	GRAVEL; tan, sandy, very little fines, dry.	0	Stainless Steel
	10-		2.5					SAND; tan with gravel throughout, dry.	0	High Solids
BD-41 BOR	14-		2.5				SP	As above	0	
07-15-2002 K'Uowners GroveWITECH 10gs/BD-4/BOR	16-		1.25				CL	CLAY; tan gravelly, dry to moist, low to medium plasticity, sandy at bottom.	0	
-15-2002 k. Cowners	18-		1.25		•		GP	GRAVEL; poorly graded, brown/orange, mixed with sand, dry, loose.	0	
6	20-	1	<u> </u>	<u> </u>				<u> </u>	J	ا ناك



SOLUTIONS ShartDate Solutions Solu	V	JL	(G_r)			L			LOG OF BOR	יטם טאווי.	
Depth in feet Second Secon		EII	sworth Ind Downers	lustrial P s Grove		VS _{Bu}	Finish Da Driller Drilling M	ite lethod	: 5/31/02 : Boart Longyear : Rotosonic	WESTON Ge	
1.25 22- 1.25 24- 1.25 As above, very stiff. GP As above, very stiff. GP As above, very stiff. O Stainless St High Solids As above, loose.	in feet	Samples	recovery (ft)	blow counts	(in)	GRAPHIC	nscs		DESCRIPTION		
24 1.25 0 1.25 28 1.25 0 As above, very stiff. 0 Stainless St. As above, loose. 0 High Solids 1.25 32 As above, loose. 0 As above, loose.			1.25							0	
30 - 1.25 As above, very stiff. O Stainless St High Solids As above, loose.	24		1.25							O	
As above, loose. As above, loose.							GP	As above	e, very stiff.		
As above, loose.	30-							As above	e, loose.		Stainless Steel High Solids
GC GRAVEL; tan, mixed with clay, some sand, moist. GC GRAVEL; tan, mixed with clay, some sand, moist. GRAVEL; brown/orange, mixed with sand, some cobbles, dry.		*****************	1.25					As abov	e, loose.	o	
GRAVEL; brown/orange, mixed with sand, some cobbles, dry.	36-						GC	GRAVEI sand, m	L; tan, mixed with clay, some oist.	0	
	38-						GP	GRAVE sand, so	L; brown/orange, mixed with ome cobbles, dry.	0	

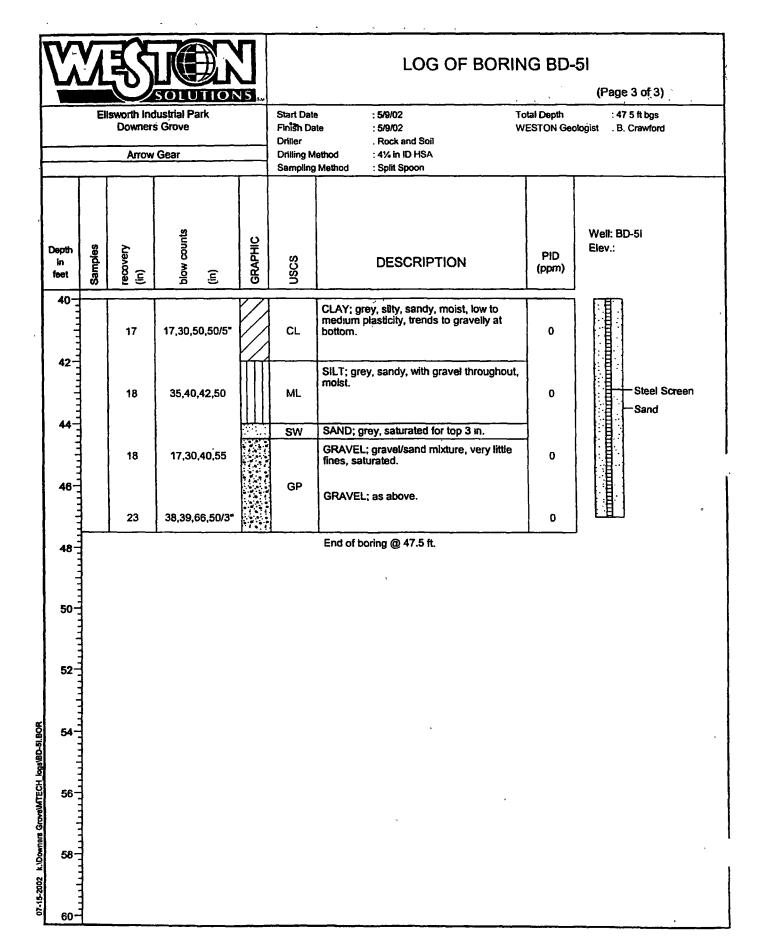


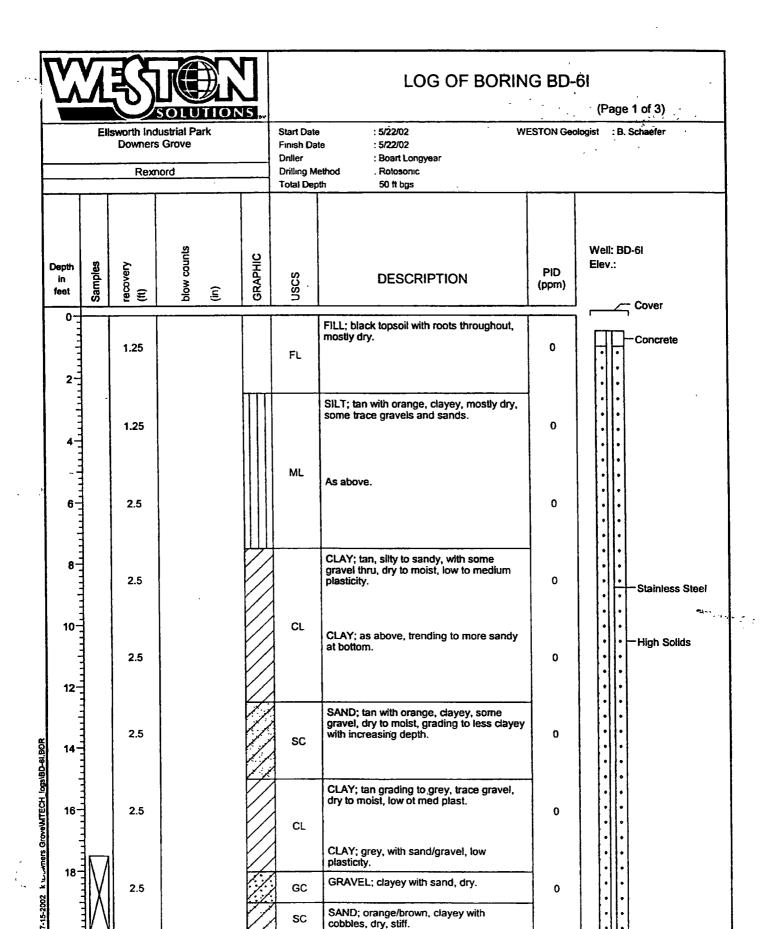
			SOLU	IIONS		Start Date	e ; 5/31/02 Wi	ESTON Geo	(Page 3 of 3)
		Downers	Grove			Finish Da Driller Dnlling M Total Dep	te : 5/31/02 : Boart Longyear ethod : Rotosonic		,
Depth in feet	Samples	recovery (ft)	blow counts	(ii)	GRAPHIC	nscs	DESCRIPTION	PID (ppm)	Well: 8D-41 Elev.:
40-							GRAVEL; as above, moist at bottom, with		Litab Calida
42		2.5				GP	large cobbles.	0	High Solids Stainless Steel
44		2.5		e: :			As above. SILT; grey, sandy with some cobbles, moist to wet.	0	Stainless Steel Bentonite Chips
46-		2.5					As above, stiff (till).	0	
48		2.5				ML	As above.	o	
50-		2.5						0	Sand Steel Screen
54		2.5					As above.	0	
56						GW	GRAVEL; Well graded, no fines or sands.	0	
58	1						End of boring @ 57 ft.		· · · · · · · · · · · · · · · · · · ·
60-									

	$ar{\mathcal{K}}$	Y.	3				LOG OF BORIN		5l (Page 1 of 3)		
		Elk	sworth Ind Downers Arrow	ustrial Park Grove		Start Date Finish Da Doller Dolling M	: 5/9/02 To te : 5/9/02 W : Rock and Soil	Total Depth : 47.5 ft bgs WESTON Geologist : B. Crawford			
t			Anow	Geal		Sampling					
	Depth in feet	Samples	recovery (in)	blow counts (in)	GRAPHIC	nscs	DESCRIPTION	PID (ppm)	Well: BD-5I Elev.: — Cover		
	0- 2-		8	5,6,7,6		OL	CLAY; black, organic, rich, slity, roots throughout, dry, low plasticity. CLAY; as above.	0	Concrete		
			13	5,8,8,8		CL	CLAY, as above. CLAY; light brown, sandy, dry, stiff, low plasticity.	0			
	4-		15	5,5,6,8		OL GC	CLAY; black, organic, rich, stiff, some roots, dry, low plasticity. GRAVEL; orange-brown, clayey, with sand, dry.	0			
	6- - - 8-		14	6,6,5,8		OL GC	CLAY; as above. GRAVEL; as above.	0			
	-		9	6,6,3,8		OL	CLAY; as above. SAND: orange-brown, clayey with some gravel, dry to moist.	0	Stainless Steel		
	10-		14	7,8,14,11		sc	SAND: as above, with more gravel.	0	Grout		
JR.	12-		10	15,15,15,15			As above.	0			
CH logs/BD-51.BC	14-	M	6	10,15,12,12		GC	GRAVEL; orange-brown, rich, sandy, dry to moist.	0			
07-15-2002 k:Downers Grove/MTECH logs/BD-51.BOR	16-		14	11,9,6,9			SAND; orange-brown, silty, with trace gravel at top, dry to moist.	0			
-15-2002 k:\Dow	18-		17	20,11,11,15		SM	SAND; as above.	0			

W.ES	
	SOLUTIONS

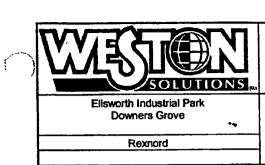
••	Ell	sworth Ind Downers Arrow			Start Date Finish Date Driller Drilling M Sampling	ate : 5/9/02 WESTON Geologist B. Crawford : Rock and Soil : 4% in ID HSA				
Depth In feet	Samples	recovery (in)	blow counts (in)	GRAPHIC	SOSO	DESCRIPTION	PID (ppm)	Well: BD-51 Elev.:		
20-					sc	SAND; orange, clayey, gravelly, dry.		ा ।		
41111		16	14,20,20,14		CL	CLAY; grey, stiff, dry, low plasticity, trace gravel.	0			
22	-	13	6,7,9,11		sc	SAND; as above.	0			
24					CL	CLAY; as above. CLAY; grey, stiff, dry, low plasticity, some large gravel at 8 in.				
26		19	17,16,15,30		sc	SAND; alternating grey to orange-brown, clayey, some gravel throughout, dry to moist.	0	Grout		
	\bigvee	22	13,11,8,8			CLAY; grey with trace gravel at top, some silts near bottom, dry to moist, low to medium. plasticity.	o	Stainless Stee		
28-		6	17,20,23,20		CL	CLAY; grey with gravel, dry, low to medium plast.	0			
30-		18	15,10,20,25			As above.	0	Bentonite Pell		
32		18	43,46,42,45		GP	GRAVEL; poorly graded with some sands, moist.	0			
34	1				SM	SAND; 1 in of orange-brown, silty, moist.]			
		8	55,50/3"		GW	GRAVEL; angular, potentially going through rock layer.	0			
36-					GP	GRAVEL; poorly graded, with sand, moist.	1			
-		19	38,50,48,40		SM	SAND: orange-brown, grading from silty to sandy from top to bottom, some moisture.	0	Steel Screen		
38-	1			1./	sc	SAND; dayey, black, organic, moist.	1	Steel Screen		
	1	13	5,10,15,20	Y/	CL	CLAY; grey, stiff, silty, dry to moist, low to medium plasticity.	0			







		U	SOLUTIO				ŗ.	(Page 2 of 3)
	EiÌ	Sworth Ind Downers Rex			Start Dat Finish Da Driller Drilling M Total De	te : 5/22/02 : Boart Longyear lethod Rotosonic	VESTON Geo	ologist : B. Schaefér
Depth in feet	Samples	recovery (ft)	blow counts (in)	GRAРНІС	nscs	DESCRIPTION	PID (ppm)	Well: BD-6l Elev.:
20-	 			//		SAND; as above.		नान
		2.5		//	SC	GRAVEL; poorly graded, mixed with sand and large fractured cobbles, dry.	- О	
22- 24-		2.5			GP	As above.	0	
28-		1.5			CL	CLAY; tan, silty, with trace gravel, soft, dry to moist, low to medium plasticity.	0	
28-		1.5			GP SP	GRAVEL; poorly graded, with sand, dry, some cobbles. SAND; brown/orange, stiff, with gravel,	0	Stainless Steel
30 - 32 -		1.5			GP	dry, till. GRAVEL; poorly graded, with sand, dry, some cobbles. As above, quite a few cobbles, cobbles appear weathered.	0	High Solids
34-		1.5			GC	GRAVEL; brown with orange, clayey, with some sand, mostly dry, some cobbles.	0	
34-36-38-		2.5			ML	SILT; grey to tan, clayey, fine, with gravel dry to moist.	0	
38-	7 -3	2.5			sc	SAND; grey with some day, fairly well graded, some gravel, wet.	0	
40-	<u> </u>	L			1			



	FI	sworth Ind	SOLU		15 ₈₀	Start Date	e : 5/22/02 V	/ESTON Ge	(Page 3 of 3)
		Downers	Grove		.,	Finish Da Driller Drilling M	te : 5/22/02 : Boart Longyear ethod : Rotosonic	1201011 001	. D. JUNETEI
Depth in feet	Samples	recovery (ft)	blow counts	. (uį)	GRAPHIC	Total Dep	DESCRIPTION	PID (ppm)	Welk BI D-6I Elev.:
40-	S	2 5	<u> </u>	_=		sc	SAND; as above.		
42		2.5					CLAY; grey, stiff, with gravel (till), dry to moist, low plasticity.	0	Stainless Steel Bentonite Chips
44		2.5				CL	As above, grading to silty day, small gravel seam midway through sample.	0	
46		2					GRAVEL; grey, sand mixture, with some cobbles, saturated.	0	Sand Steel Screen
48-		2				GP	GRAVEL; as above, more day grading towards bottom.	0	Sand Steel Screen
50-		<u> </u>		· · · · · · · · · · · · · · · · · · ·		<u>i</u>	End of boring at 50 ft.		
52-									
54-									
56-									
58-									

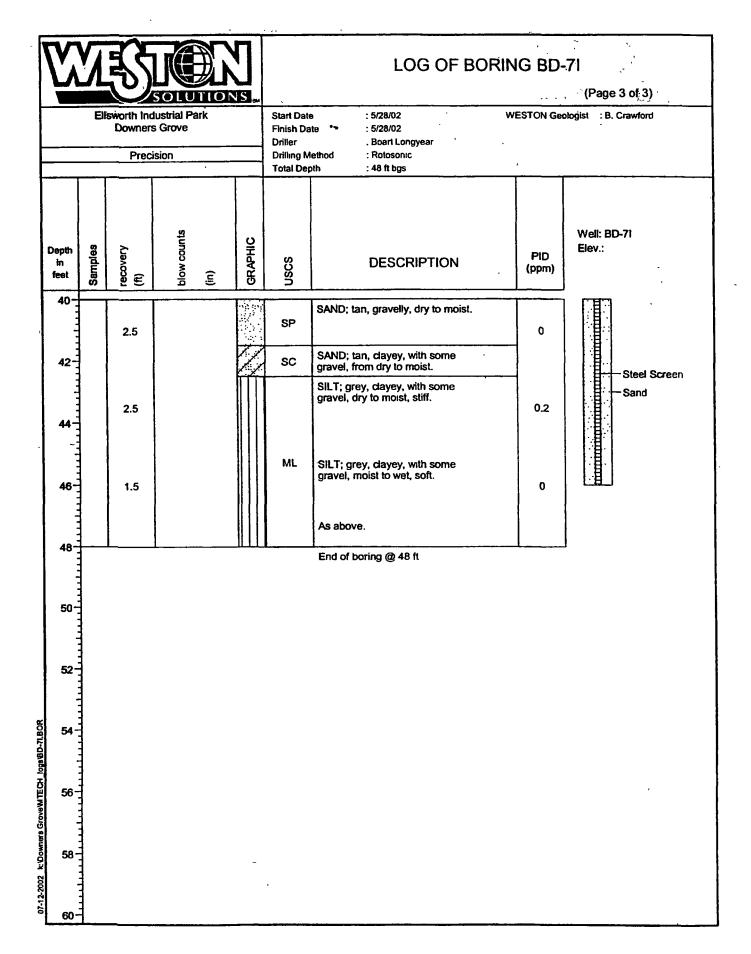
V.	<u>Y</u> L	3	Solu					LC
	EII	sworth Ind Downers	s Grove	ark		Start Date Finish Da Driller	te	5/28/02 ; 5/28/02 ; Boart Lone
<u> </u>		Prec	ision			Drilling M Total Der		: Rotosonic : 48 ft bgs
Depth in feet	Samples	recovery (ft)	blow counts	(in)	GRAPHIC	nscs		DESCF
2		1.25'				FL	FILL; bia soil, roof	ack organic o
4-		1.25				CL	CLAY; g sandy, v	rey grading very stiff, dry
6-		2.5					SAND; i mostly r	an, clayey, v noist, mediu

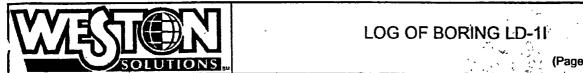
7		U	2017 17		15				(Page 1 of 3)
	EI	Sworth Ind Downers	s Grove	ark		Start Date Finish Da Driller Drilling M	ete : 5/28/02 ** : Boart Longyear lethod : Rotosonic	ESTON Geo	logist : B. Crawford
						Total De	oth : 48 ft bgs		
Depth in feet	Samples	recovery (ft)	blow counts	(in)	GRAPHIC	USCS	DESCRIPTION	PID (ppm)	Well: BD-7I Elev.: Cover
0-		1.25'				FL	FILL; black organic clay rich fill material, soil, roots throughout, dry to moist.	0	Concrete
4-		1.25				CL	CLAY; grey grading to orange/brown, sandy, very stiff, dry, low plasticity.	0	
6-		2.5					SAND; tan, clayey, with gravel throughout, mostly moist, medium plasticity.	0	
8-	***************************************	2.5				SC	SAND; as above.	0	Stainless Steel
10-	****	2.5				CL	CLAY; tan, sandy, with some gravel throughout, mostly moist, medium plasticity	0	High Solids
14-	يعثيفييانيينا	2.5					CLAY; as above. GRAVEL; tan, clayey, with sand, dry to moist.	0	
16-	لعميماميماما	1				GC	As above	0	
18-	بتبليينينين	1.5				CL	CLAY; tan, sandy, dry to moist, low to medium plasticity.	0	
20-	1-		<u> </u>		<u>r</u> _	ــــــــــــــــــــــــــــــــــــــ	_1		لناك ا



(Page 2 of 3)

_			SOLU	TION	2 m				(Page 2 of 3)	
	E	Downers Prec	s Grove	ark		Start Date Finish Da Driller Orilling M Total Dep	te : 5/28/02 Boart Longyear ethod : Rotosonic	ogist : B. Crawford		
Depth in feet	Samples	recovery (ft)	blow counts		GRAPHIC	nscs	Well: BD-7			
20		2.5	ă	(i)	ō	ž	SAND; tan, clayey, with some gravel throughout, mostly dry to moist, large rock fragments at	0		
22		2				sc	SAND; tan, clayey with some gravel throughout, mostly dry to moist, large cobble at bottom.	o		
24		1.5					SAND; as above, with less clay and no cobble at bottom, and wet.	0	High Solids Stainless Steel	
28	4	1.5					CLAY; grey silty, with some gravel and sand, stiff, dry to moist, low to medium plasticity.	0		
30		2.5					As above	0	Rontonito Chine	
	oration.	2.5				CL	As above with approximately 6 in of rock at bottom.	0	Bentonite Chips	
GrovaWIECH logs@f	ولاستملاستماله	1					CLAY; grey, gravelly, moist to wet, low to medium plasticity.	o	Sand	
07-12-2002 k*VOowners GroveWTECH logs/BD-71,BOR		2.5			<i>/ /</i>	SP	SAND; tan, gravelly, dry to moist.	0	Sand Steel Screen	





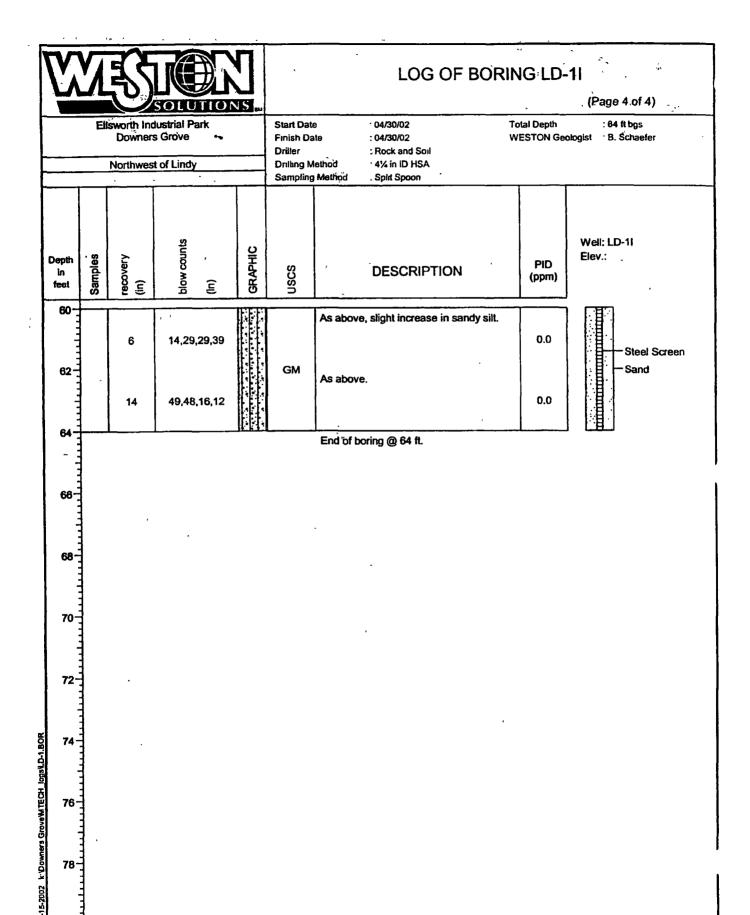
A	<u>/L</u>	(J)	SOLUTION	ZZ		200 01 801		(Page 1 of 4)
		sworth Ind Downers Northwest			Start Date Finish Date Onlier Drilling M Sampling	ete : 04/30/02 : Rock and Soil lethod . 41/4 in ID HSA	Total Depth WESTON Geo	: 64 ft bgs logist : B. Schaefer
Depth in feet	Samples	recovery (in)	blow counts (in)	GRAPHIC	nscs	DESCRIPTION	PID (ppm)	Well: LD-1I Elev.:
0		6	2,3,3,4			CLAY, silty day fill, trace sand and gravel, black, low plasticity.	0.0	Concrete
2		8	6,7,9,9		,	CLAY, silty, trace gravel, black, some tan, firm, dry, low plasticity.	0.0	
4-	\bigvee	9	6,7,10,10		6:	CLAY, silt, trace gravel, tan, firm, dry, low plasticity.	0.0	
6-		12	6,7,10,10		CL	CLAY, silty sand with gravel, tan, firm, dry, low plasticity.	0.0	
8~ - 10~		10	4,6,8,9			As above, trace cobbles.	0.0	Stainless Steel
12-		9	5,6,15,5			As above, less cobbles.	0.0	Grout
14-		14	5,6,14,12	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		GRAVEL, silty clay and sand, trace cobble, tan, loose to dense, well graded, moist.	0.0	
16		9	16,12,10,11	0	GW	GRAVEL, silt and sand, tan to gray, loose, dry, well graded.	0.0	
18-		21	50/5"	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		GRAVEL, gray cobble, possibly limestone, rock fragments, dry.	0.0	
14- 16- 18-		13	4,17,12,50	5 . 5 5 . 5		GRAVEL, silt and sand, trace white cobble, tan, slightly loose, slightly most well graded.	st, 0.0	

W	3 5		Z 4
1		OLUTIC	NS

			SOLUTION	15 "	:			(Page 2 of 4)
	Ell	Sworth Ind Downers Northwest			Start Date : 04/30/02 Finish Date : 04/30/02 Driller : Rock and Soil Dnilling Method : 4½ in ID HSA Sampling Method : Split Spoon		Total Depth WESTON Geo	: 64 ft bgs blogist : B. Schaefer
Depth in feet	Samples	racovery (in)	blow counts (in)	GRAPHIC	nscs	DESCRIPTION	PID (ppm)	Well: LD-11 Elev.:
20-		[As above.	\top	TH.
}		9	7,12,12,16	0.0	GW		0.0	
22-		2	7,20,15,15	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	GW	GRAVEL, gray-white cobble, possibly limestone, dry.	0.0	
24-		19	7,20,22,22		CL	CLAY, silty clay, some gravel, hard, slightly moist, well graded.	0.0	
28-	•	12	35,48,50/1"			As above. GRAVEL, silty sand and gravel, tan, dry, slightly loose, well graded.	0.0	
30-	-	12	38,50/4*		GM	As above, loose.	0.0	Stainless Steel
32-	-	13	38,50/4"			As above.	0.0	
¥ 24.	***************************************	12	28,30, 1 5,12		SM	SAND, silty sand, trace gravel, tan to gray, slightly loose, dry, fine to coarse, well graded.	0.0	
34 34 34 34 34 34 34 34 34 34 34 34 34 3	_	12	49,50/2"		CL	CLAY, sitty day, trace pebbles and thir rock layer between gray and brown day, gray to brown, very firm, slightly moist, low plasticity.	1.8	
ners GroveW1EC						No recovery.		
07-15-2002 k Downers GrawMTECH JogsUD-1.BOR	وافيفيانيه	4	50/3*	o . c	GW	GRAVEL, cobbles and fragments, gray dry.	0.0	



	A			OLUTION				•.	(Page 3 of 4)
			sworth Ind Downers Northwest			Start Date Finish Da Driller Drilling M	te : 04/30/02 : Rock and Soil	Total Depth WESTON Geologi	: 64 tt bgs st : B. Schaefer
Ī						Sampling	Method . Split Spoon		
	Depth in feet	Samples	recovery (in)	blow counts (in)	GRAPHIC	nscs	DESCRIPTION		Veli: i.D-1 Elev.:
	40-		10	47,50/3"			GRAVEL, silts and fragments, gray gravel, tan, dry, very stiff, dense.	0.0	
	42	\bigvee	11	29,32,35,12		GM	GRAVEL, silty sand with gravel, gray gravel/cobble fragments, tan, slightly loose, dry to wet, well graded.	1.2	Grout
	44-		12	15,17,24,5		CL	CLAY, sand and silt to silty clay, trace gravel at top 2 in, tan, soft to very firm, wet to very moist, low plasticity.	2.2	Stainless Steel
	48-		6	29,50/3"		GW	CLAY, silty day, some gravel, tan, soft, very moist to wet, low plasticity. GRAVEL, gray cobble fragment, possibly limestone, tan, dry.	0.9	
	50~						No recovery.		Bentonite Chips
			13	27,37,50/4"		SM	SAND, silt with gray cobble at top 3 in, silty sand, trace gravel, trace red feldspar, fine to coarse sand, dry, loose, well graded.	0.0	77.74 BB27
~	52-		14	5,5,6,7			SILT, clayey very fine sand with pebbles throughout, very soft, wet, low plasticity.	0.0	7.55 7.55 7.55 7.55 7.55 7.55 7.55 7.55
H logs/LD-1.BO!	54-	طنيهمايين	6	50/3"		ML	As above, gray cobbles at bottom.	0.0	Sand
ners GroveWITEC	56-	7,000,000					No recovery.		Steel Screen
07-15-2002 k Downers Grove WITECH logs LD-1.BOR	58-	*	9	27,35,33,22		GM	GRAVEL, cobbles with fine sandy silt, gray, saturated, well graded.	0.0	Sand Steel Screen
0	60-	 							لجلتاب





LOG OF BORING EIP-SS188 I

(Page 1 of 2)

U S EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A

11-16-2007 K \EPA\Ellsworth Industnal Park\2006-2007 Bonng Logs\QC complete\SS188I bor

Start Date 1-2-07
Finish Date 1-2-07
Driller Transhield

Total Depth Location 44' bgs Tricon 5000-5014 Chase

Dow				Industrial Park u Page County, Illinois	Driller Drilling Method Sampling Method	Transhield HSA Grab			WESTON Geol	5000-5014 Chase ogist T Sundquist
DЕРТН (ft)	RECOVERY (in)	GRAPHIC	nscs	Investigative with Geo	Collected firmation Sample Collect otech (Grain Size, CEC, 1		SAMPLES	PID (ppm)	REMARKS	MW-188 I
0-		J	AS	ASPHALT surface cover a	nd subbase.		M		Soil sample collected at 0859	Flushmount
_			OL	ORGANIC SOIL, dark brow	wn/black, dry, crumbly	y	H	0 1	EIP-SS188-000-1	
4-	41/48		sc	CLAYEY SAND, medium be pebbles	prown, dry, crumbly, f	ew	X	01	Soil sample collected at 0902 EIP-SS188-004-1	
8-	40/48			SILTY CLAY, light olive/bro	own, soft, moist, som	e sand	X	01	Soil sample collected at 0904 EIP-SS188-008-1	
12-	40/48		CL	as above, few pebbles. as above, pebbles absent SILTY CLAY, light olive/b moist, sands, few pebbles as above, medium consist pebbles.			X	01	Soil sample collected at 0909 EIP-SS188-012-1	2" SS Riser
16-	48/48			as above, medium olive/br	own, soft, pebbles ab	esent		03	Soil sample collected at 0914 EIP-SS188-016-1	Glout
-	48/48		sc	CLAYEY SAND, medium to cobbles/pebbles.	prown, moist, pebbles	5.		0 0	Switched to 2' split spoon at 20' Soil sample collected at	
20-	12/24			SAND, brown, well graded pebbles, little clay	, coarse grained, dry,	,	X	03	0946 EIP-SS188-020-1 Soil sample collected at 0956	
24-	18/24							8 0	EIP-SS188-022-1 Soil sample collected at 1008	
-	20/24		sw	SAND/GRAVEL, brown, copebbles/cobbles, little clay	oarse grained, dry,			02	Soil sample collected at	
28-	24/24			as above, wet			Å	03	1026 EIP-SS188-026-1 Soil sample collected at 1038	
-	9/24						A	0 7	EIP-SS188-028-1 Soil sample collected at 1048	∷ ⊟Bentonite Chips
32-	14/24						X	0 7	EIP-SS188-030-1	Sand Pack 0 010" Slot Screen



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LOG OF BORING EIP-SS188 I

(Page 2 of 2) Restoring Resource Efficiency Start Date 1-2-07 **Total Depth** 44' bgs U.S. EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A Finish Date 1-2-07 Location Tricon Transhield 5000-5014 Chase Driller Ellsworth Industrial Park WESTON Geologist **Drilling Method** HSA T Sundquist Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected RECOVERY (III) Investigative and Confirmation Sample Collected MW-188 I Investigative with Geotech (Grain Size, CEC, ORP, TOC) DEPTH (ft) SAMPLES PID (ppm) GRAPHIC nscs **REMARKS** DESCRIPTION 32 SAND, brown, coarse grained, wet Soil sample collected at SP EIP-SS188-032-1 Soil sample collected at GRAVEL/SAND, brown, coarse grained, wet, GW 18/24 cobbles/pebbles. 1123 SAND, brown, coarse grained, wet EIP-SS188-034-1 16/24 36 Soil sample collected at -0.010" Slot Screen 1138 EIP-SS188-036-1 SF 15/24 Soil sample collected at Sand Pack 1156 EIP-SS188-038-1 as above, gray, fine grained. 18/24 40 Soil sample collected at as above, brown, coarse grained. 1203 EIP-SS188-040-1 SILTY CLAY, gray, medium, moist, sands 24/24 SAND, gray, fine, moist Soil sample collected at SANDY CLAY, gray, medium, moist EIP-SS188-042-1 LSILTY CLAY, gray, medium to stiff, moist, some sand 44 **END OF BORING AT 44'** Monitoring Well Developed 1/15/07 11-16-2007 K \EPA\Ellsworth Industnal Park\2006-2007 Bonng Logs\QC complete\SS188I bor 48 52 56 60



39/60

30

LOG OF BORING EIP-SS192 I

(Page 1 of 2) Restoring Resource Efficiency 1-4-07 Start Date Total Depth 45' bgs U S EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A Finish Date 1-5-07 Location Tricon Driller Transhield 5000-5014 Chase Ellsworth Industrial Park **Drilling Method** Geoprobe/HSA **WESTON Geologist** J Hunter Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected Ξ Investigative and Confirmation Sample Collected RECOVERY Investigative with Geotech (Grain Size, CEC, ORP, TOC) MW-192 I DEPTH (ft) SAMPLES GRAPHIC PID (ppm) nscs **REMARKS DESCRIPTION** · Flushmount ASPHALT surface cover and gravel subbase, light Concrete gray, slightly moist. CLAY, brown, slightly stiff, trace sand Soil sample collected at 1440 EIP-SS192-003-1 45/60 5 as above, slightly moist, trace gravel CL Soil sample collected at 1444 EIP-SS192-008-1 48/60 as above, large gravels 10 Soil sample collected at -GRAVELLY CLAY, slightly moist EIP-SS192-010-1 CLAYEY SAND, wet, trace gravel. SC SAND, brown, poorly graded, fine grained, wet, trace 2" SS Riser 48/60 1-16-2007 K \EPA\Ellsworth Industrial Park\2006-2007 Boring Logs\QC complete\SS192I bor 15as above, clay content increasing Grout Soil sample and SANDY CLAY, gray, wet duplicate collected at CLAYEY SAND, gray, wet 1457 EIP-SS192-018-1 and EIP-SS192-018-2 SANDY CLAY, gray, wet 60/60 20 20-CL Soil sample collected at 1512 EIP-SS192-023-1 39/60 25 Soil sample collected at SAND, brown, well graded, medium to coarse grained, 1530 dry to slightly moist EIP-SS192-025-1 sw Soil sample collected at EIP-SS192-028-1



LOG OF BORING EIP-SS192 I

(Page 2 of 2) Restoring Resource Efficiency Start Date 1-4-07 **Total Depth** 45' bgs U.S. EPA Region V Remedial Action Contract 1-5-07 Finish Date Location Tricon Work Assignment 251-RICO-B52A Transhield 5000-5014 Chase Driller Ellsworth Industrial Park WESTON Geologist Drilling Method Geoprobe/HSA J Hunter Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected RECOVERY (in) Investigative and Confirmation Sample Collected MW-192 I Investigative with Geotech (Grain Size, CEC, ORP, TOC) DEPTH (ft) SAMPLES GRAPHIC PID (ppm) uscs **REMARKS DESCRIPTION** 30 sw SAND, brown, well graded, medium to coarse grained, Grout SANDY CLAY, brown, slightly moist. CL 2" SS Riser 06 Soil sample collected at 1548 GRAVEL, light gray, large, dry, sand content EIP-SS192-033-1 increasing. Bentonite Chips 46/60 09 35 Soil sample collected at SAND, brown, well graded, medium grained, saturated 1613 EIP-SS192-035-1 Soil sample collected at 1613 EIP-SS192-038-1 sw Sand Pack 60/60 16 40 as above, gray 0.010" Slot Screen Soil sample collected at 1637 GRAVEL, gray, well graded, saturated, trace sand. EIP-SS192-043-1 57/60 11-16-2007 K \EPA\Ellsworth Industrial Park\2006-2007 Boning Logs\QC complete\SS192I bor 45 **END OF BORING AT 45'** Monitoring Well Developed 1/16/07 50 55 60



LOG OF BORING EIP-SS193 I

(Page 1 of 2)

US EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A

30

Start Date 1-5-07 Finish Date 1-6-07 Total Depth Location

50' bas Tricon

Driller Transhield 5000-5014 Chase Elisworth Industrial Park **Drilling Method** Geoprobe/HSA **WESTON Geologist** T Sundquist Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected Ξ Investigative and Confirmation Sample Collected RECOVERY Investigative with Geotech (Grain Size, CEC, ORP, TOC) MW-193 I DEPTH (#) SAMPLES GRAPHIC PID (ppm) USCS REMARKS DESCRIPTION Flushmount Soil sample and ASPHALT surface cover and subbase. Concrete AS duplicate collected at 0755 EIP-SS193-000-1 ORGANIC SOIL, black, very soft, moist, crumbly and EIP-SS193-000-2 OL SANDY CLAY, brown, very soft, moist, crumbly, turning to medium consistency, few pebbles with depth. 52/60 (ი 1 5 No Recovery from 5' to 5.8'. Soil sample collected at 0759 SANDY CLAY, dark brown, very soft, wet to EIP-SS193-005-1 saturated 02 as above, brown, soft, moist, few pebbles, turning to slightly moist, medium to stiff with depth. 50/60 02 SANDY CLAY, brown, wet to saturated. 10 Soil sample and duplicate collected at as above, medium consistency, slighly moist, few 0807 EIP-SS193-010-1 pebbles and EIP-SS193-010-2 ถา 60/60 0 1 11-16-2007 K \EPA\Ellsworth Industnal Park\2006-2007 Bonng Logs\QC complete\SS193l bor 15-NO RECOVERY from 15' to 17.8' Grout NR 2" SS Riser NR Soil sample collected at CLAYEY SAND, red/brown, coarse grained, slightly 0818 EIP-SS193-018-1 moist, cobbles/pebbles intermixed. 26/60 SAND/GRAVEL, coarse grained, dry, little clay, 03 20cobbles/pebbles NR NO RECOVERY from 20' to 22'. NR SAND, red/brown, coarse grained, dry, Soil sample collected at cobbles/pebbles intermixed, little clay. 0834 EIP-SS193-023-1 lsw 36/60 03 25 as above wet to moist SILTY CLAY, gray, medium to stiff, dry, few pebbles 03 Soil sample collected at EIP-SS193-028-1 60/60



LOG OF BORING EIP-SS193 I

				SOLUTIONS, esource Efficiency	Charl Date	4 5 07			Total Dooth	(Page 2 of 2)
V	Nork A E	Assıç Ilsw	gnm orth	Remedial Action Contract ent 251-RICO-B52A Industrial Park Du Page County, Illinois	Start Date Finish Date Driller Drilling Method Sampling Method	1-5-07 1-6-07 Transhield Geoprobe/ Grab	HSA		Total Depth Location WESTON Geo	50' bgs Tricon 5000-5014 Chase logist T Sundquist
DEPTH (ft)	RECOVERY (in)	GRAPHIC	nscs	Investigative with Geo	Collected offirmation Sample Collect otech (Grain Size, CEC,		SAMPLES	PID (ppm)	REMARKS	MW-193 I
35—	60/60		CL	SILTY CLAY, gray, medium pebbles No Recovery from 35' to 3 as above, wet, cobbles. as above, moist		st, few	X	03	Soil sample collected at 0919 EIP-SS193-033-1 Soil sample collected at 0951 EIP-SS193-035-1	— Grout — Bentonite Chips — 2" SS Riser — Sand Pack
40-	47/60		sw	SAND, brown, coarse grain SAND/GRAVEL, gray, coart 39.4'. No Recovery from 40' to 4 SAND, gray, coarse graine 4" silty clay seam, gray, rigray cobbles.	rse grained, moist, c 1.5'. ed, moist, cobbles/pe	ebbles		05	Soil sample collected at 1015 EIP-SS193-040-1	0 010" Slot Scr
45	42/60			SAND, gray, fine grained, SAND, gray, coarse graine SAND, light brown, mediui as above, gray/brown. SILTY CLAY, gray, dry, sli trace cobbles.	ed, pebbles. m grained, moist.	ebbles,		05	Soil sample collected at	
50-	60/60		ML	SILT/SAND, gray/brown, o END OF BORING AT 50' Monitoring Well Developed		ay.		0.5	1047 EIP-SS193-048-1	
- 55— -										
60-										



LOG OF BORING EIP-SS194 I

(Page 1 of 2)

U.S. EPA Region V Remedial Action Co	ontract
Work Assignment 251-RICO-B52/	4

Start Date Finish Date 1-2-07 1-3-07 Total Depth Location 45' bgs Precision Brand

_	Industrial Park	Driller Drilling Method	Transhield Geoprobe/H	124		WESTON Geol	2250 Curtiss
	Du Page County, Illinois	Sampling Method	Grab	10/1		WESTON GEOR	ogist 5 Hunter
DEPTH (ft) RECOVERY (m) GRAPHIC USCS	Investigative with Ge	Collected Infirmation Sample Collect otech (Grain Size, CEC,		SAMPLES	PID (ppm)	REMARKS	MW-194 I — Stick-up
0 7.118	TOPSOIL, black, slightly r	noiet	I	X 7		Soil sample collected at	
	GRAVEL, light gray, well of CLAY, black, stiff, dry as above, brown, trace roas above, dark brown, sl sand/gravel	praded, dry	e, trace	X	1 1	0845 EIP-SS194-000-1	— Concrete
5_45/60 CL	SANDY CLAY, brown to c cohesive, sand content in throughout.		oist,		00		
10 — 57/60	as above, brown, large gr	avel piece embedded	1	X	03	Soil sample collected at 0855 EIP-SS194-008-1	
SC 34/60	CLAYEY SAND, light brov	vn, moist.		X	02	Soil sample collected at 0905 EIP-SS194-013-1	
15 34/60 CL			vel	\bigvee	28	Soil sample collected at 0910 EIP-SS194-015-1	Grout 2" SS Riser
1 1274	SAND, gray, poorly grade gradually transitioning to g GRAVELLY CLAY, gray,	ravelly clay	bbles		00	0920	
Cr				A	12	EIP-SS194-020-1	
25 - 58/60 sw		ey seams		M	07	Soil sample collected at 1003 EIP-SS194-025-1	
SP	erarb, brown, poony grad		, moist	\bowtie	0 0		
CL	CLAY, gray, slightly moist GRAVEL, light gray, well		et to				
30 57/60 GW	slightly wet, trace sand.	graded, arigular, mols	ə. 10		0 0		



LOG OF BORING EIP-SS194 I

(Page 2 of 2)

U.S. EPA Region V Remedial Action Contract | Start Date

1-2-07

Total Depth

45' bgs

					Remedial Action Contract ent 251-RICO-B52A	Start Date Finish Date	1-2-07 1-3-07			Total Depth Location	45' bgs Precision Brand
	Dov				Industrial Park Du Page County, Illinois	Driller Drilling Method Sampling Method	Transhæld Geoprobe/l Grab	HSA		WESTON Geol	2250 Curtiss ogist J Hunter
	DEPTH (ft)	RECOVERY (in)	GRAPHIC	nscs	Investigative with Ger	Collected offirmation Sample Collect otech (Grain Size, CEC,		SAMPLES	PID (ppm)	REMARKS	MW-194 I
	30	56/60		GW	GRAVEL, light gray, well g sand, transitioning to brow with depth 3" poorly graded gravel se	n, slightly moist, trace	e clay	X	0 0	Soil sample collected at 1027 EIP-SS194-033-1 Soil sample collected at	— Grout — Bentonite Chips — 2" SS Riser
	-			SP SW CL	SAND, light brown, poorly SAND with gravel, well gra SILTY CLAY, gray, slightly SAND, gray, poorly grader	aded, wet v moist.		X	0 0	1054 EIP-SS194-035-1	Sand Pack
	40			SP GP CL	as above, saturated GRAVEL, light gray, poorl CLAY, gray, slightly moist pebbles, moisture and pla	slightly plastic, trace		X	00	Soil sample collected at 1135 EIP-SS194-040-1	
gs\QC complete\SS194l bor	45 — - - -				END OF BORING AT 45' Monitoring Well Developed	d 1/17/07			0 0		
Park\2006-2007 Bonng Logs\C	50 — - -										
11-16-2007 K \EPA\Ellsworth Industrial Park\2006-2007 Boring Lo	- 55 — - -										
11-16-2	60 <i>-</i>										



LOG OF BORING EIP-SS195 I

(Page 1 of 2)

U S EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A

Start Date Finish Date 1-2-07 1-3-07 Total Depth Location

45' bgs Precision Brand

	V	VOTK F	ASSIG	nme	ent 251-RICO-B52A	Driller Transhield			Location Precision Brand 2250 Curtiss			
		_		-41- 1	Indicate a Design				ICA MECTO			
	Dou	Ellsworth Industrial Park Downers Grove, Du Page County, Illinois				Drilling Method Geoprobe/li Sampling Method Grab		1SA		WESTON Geol	ogist J Hunter	
L	DOM	vners '	Grov	e, D	u Page County, Illinois	Grab						
					Samples							
					Investigative Sample Collected						MW-195 I	
		- I					"	1				
1		Ξ		1	Investigative and Cor	cted						
	$\overline{}$	≿	l l		Investigative with Geotech (Grain Size, CEC, O			, ORP, TOC)				
	Œ,	Investigative and Confirmation S S O O O O O O O O O O O O							ĮĔ			
	DЕРТН (ft)	O DESCRIPTION					곱	اق	REMARKS			
	EP	l 입	ا≨ا	ပ္က ၂	DESC	DESCRIPTION		SAMPLES	PID (ppm)			
	□	ॡ	اق	⋽∣	DES	SKII TION		Ŝ	<u> </u>		Stick-up	
	0-										Store up	
	_		TS TOPSOIL, black, slightly moist								— Concrete	
	-	1	\square		CLAY, black, dry, trace roots. CLAY, brown, dry to slightly moist, trace sand, trace						75 20	
			\mathbb{Z}	- 1				11 1				
	_	1	M		CLAY, brown, dry to slight	iy moist, trace sand,	trace		00	Soil sample and		
	_		1//		angular gravel. CLAYEY SAND with grave	el, brown, slightly mo	ust	IN A		duplicate collected at		
			\mathcal{M}		52 (12) 6/ II 12 (1 III II g/ G/ G	,, s. s , s		IIVI		1307 EIP-SS195-003-1		
	-	i	V/I					$\ \Lambda\ $		and EIP-SS195-003-2		
	E	46/60	\mathbb{Z}	ı	an about brown to habite	roup da		IV V	0 0			
	5-	1	[//]		as above, brown to light bi	own, ary						
	_	1	K//						١.		1316	
			M								F:H:-	
	-	1	\mathbb{Z}						0 0			
			\mathbb{Z}						-	Soil sample collected at		
	_	1	M							1311 EIP-SS195-008-1		
-	_		\mathbb{Z}							EIF-33 193-000-1		
		34/60	\mathbb{Z}	CL					0 0			
- 1	10-	37/00	V/l						١٠٠	Soil sample collected at		
-	_		\mathbb{Z}					\ <i>/</i>	1	1315		
-	_			Ì				IIXII	1	EIP-SS195-010-1		
-	-		1//	I				II/ \I				
-								F-	03			
- [-	1							Ì			
	_	ļ	\mathbb{Z}								1 1313	
_			1//	ł								
윤	15-	32/60		1	GRAVELLY CLAY, dark b	rown/reddish		╟─┤	0 2			
윤			\mathbb{Z}	1							∵ Grout	
3	-	1		l	as above, very moist, grav	el content increasing	q				2" SS Riser	
) jek	_	1	\mathbb{Z}	Ì	CLAY, gray, slightly mois				 		[4][4]	
틹									00	Soil sample collected at	1 (44)	
اڍ	-	1	14	\dashv	CLAYEY GRAVEL, brown	well graded maint		\ /	1	1324		
S]	[22]			, well graded, moist		X	1	EIP-SS195-018-1		
ğ	_	51/60	10.0	зw				/\			L 1919	
Ē	20-	51/60	1:::		•			ГШ	00			
ñ			12 (c)						1		316 	
00	-	1	$\ \cdot\ $		SAND, brown, well graded	l, dry.			1			
2	_	1							1			
ğ	_		1 1						00	Soil sample collected at	3 3	
a X	-	ł	1.1	sw					1	1332	[[H]]	
ig		1							1	EIP-SS195-023-1	F 164161	
티	-	1	;						1			
[]	25-	40/60							00			
ĒΙ	20-			П	SANDY CLAY, gray/brown	n, very moist.			1		L 1949	
8	-	1		CL		•			1			
<u> </u>			1//	_					1		[[H][H]	
<u> </u>	-	1	1:4	\dashv	CLAYEY GRAVEL, light b	rown to grav. dry			00	Cod consider the state of		
ᅐ	_]	100	зw	OD THE LOTATE , INGINED	.o.m. to gray, ury.		ᅜ		Soil sample collected at		
6	_			ا۷۷	as above, moisture and sa	and content increasing	na.	V	1	1348 EIP-SS195-028-1	L 13101	
윘	-	1	1991	\dashv				IJĬ.			[[3][3]	
11-16-2007 K \EPA\Eilsworth Industnal Park\2006-2007 Borng Logs\QC complete\SS195I bor	~~	58/60		CL	CLAY, gray.			/ V	0 4		1 1:41:4	
<u>-</u> L	30-		4//							•		



LOG OF BORING EIP-SS195 I

(Page 2 of 2)

U.S EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A

Ellsworth Industrial Park

11-19-2007 K \EPA\Ellsworth Industrial Park\2006-2007 Bonng Logs\QC complete\SS195I bor

55

60

Start Date 1-2-07 Finish Date 1-3-07 Driller

Transhield Geoprobe/HSA Total Depth Location

45' bgs Precision Brand 2250 Curtiss

WESTON Geologist J Hunter

Drilling Method Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected RECOVERY (in) Investigative and Confirmation Sample Collected MW-195 I Investigative with Geotech (Grain Size, CEC, ORP, TOC) DEPTH (ft) SAMPLES GRAPHIC PID (ppm) **USCS REMARKS** DESCRIPTION 30 CLAY, gray, very moist, trace gravel. -Grout Bentonite Chips Soil sample collected at as above, slightly moist. 1410 2" SS Riser EIP-S\$195-033-1 03 59/60 35 CLAYEY SAND, gray, wet. SAND, gray, well graded, saturated, trace clay Sand Pack GRAVEL, poorly graded, round, saturated. 05 SAND, gray, well graded, saturated Soil sample collected at 1440 EIP-SS195-038-1 sw 0 010" Slot Screen 47/60 26 Soil sample collected at 40 EIP-SS195-040-1 SAND, gray, poorly graded, fine grained, very moist, trace sılt 10 Soil sample collected at CLAY, gray, moist. CL EIP-SS195-043-1 large gravel piece 40/60 45 END OF BORING AT 45' Monitoring Well Developed 1/17/07 50



LOG OF BORING EIP-SS196 I

(Page 1 of 2)

U S. EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A

Start Date Finish Date 1-4-07 1-6-07 **Total Depth** Location

50' bgs Precision Brand

Ellsworth Industrial Park Downers Grove, Du Page County, Illinois					Driller Transhield Drilling Method Geoprobe/HSA				2250 Curtiss WESTON Geologist J Hunter			
DEPTH (ft)	RECOVERY (in)	GRAPHIC	nscs	Samples Investigative Sample Investigative and Cor Investigative with Ger	Collected offirmation Sample Collectech (Grain Size, CEC		SAMPLES	PID (ppm)	REMARKS	MW-196 I		
	22	_					<i>'</i> 5	₫		Flushmount		
0	46 5/6		CL	TOPSOIL, black, slightly r CLAY, dark brown/black, s as above, brown, sand an with depth	slightly moist, trace s d gravel content incr	eand. easing	X	00	Soil sample collected at 0811 EIP-SS196-003-1	— Concrete		
- - - 10—	41/60		GW	GRAVEL, light gray, well of SANDY CLAY, brown, slig as above, brown to light b	htly moist		X	02	Soil sample collected at 0815 EIP-SS196-008-1			
- - - 15	38/60		CL				X	00	Soil sample collected at 0825 EIP-SS196-013-1	Grout2" SS Riser		
- - - 20-	44/60			GRAVELLY CLAY, reddis angular, trace sand as above, wet	n brown, wet, gravei	IS	X	00	O832 EIP-SS196-018-1			
25—	60/60		SP CL NR	SAND, brown, poorly grad as above, clay content ind SILTY CLAY, gray, moist NO RECOVERY from 25'	reasing	t.		0 5 0 0	No sample collected from 25' to 30'			
30-	0/60							NR				



LOG OF BORING EIP-SS196 I

(Page 2 of 2) Restoring Resource Efficiency Start Date 1-4-07 Total Depth 50' bgs U.S EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A Finish Date 1-6-07 Location Precision Brand Driller Transhield 2250 Curtiss Ellsworth Industrial Park Geoprobe/HSA **WESTON Geologist Drilling Method** J Hunter Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected RECOVERY (in) Investigative and Confirmation Sample Collected MW-196 I Investigative with Geotech (Grain Size, CEC, ORP, TOC) DEPTH (ft) SAMPLES GRAPHIC PID (ppm) REMARKS DESCRIPTION 30 SAND, tan, poorly graded, fine to medium grained, moist Grout SP 00 Soil sample collected at as above, medium to coarse grained 0853 EIP-SS196-033-1 SANDY SILT, brown, slightly moist. 59/60 2" SS Riser 35 Soil sample collected at SILTY CLAY, gray, slightly moist, plastic, trace round 0912 EIP-SS196-035-1 Bentonite Chips 0 7 Soil sample collected at CL EIP-SS196-038-1 57/60 05 40 Soil sample collected at 0935 SANDY GRAVEL, gray, well graded, saturated EIP-SS196-040-1 00 Sand Pack 00 37/60 11-16-2007 K \EPA\Ellsworth Industnal Park\2006-2007 Bonng Logs\QC complete\SS196I bor 0 010" Slot Screen 45 GΝ 00 Soil sample collected at 1005 EIP-SS196-048-1 41/60 50-END OF BORING AT 50' Monitoring Well Developed 1/16/07 55 60



LOG OF BORING EIP-SS197A

(Page 1 of 2)

U.S. EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A

Start Date 1-4-07 1-4-07 Finish Date Driller Transhield

Total Depth Location

34' bgs Precision Brand 2250 Curtiss

Dow				al Park County, Illinois	Drilling Method Sampling Method	Geoprobe Grab	WESTON Geologist J Hunter				
DEPTH (ft)	RECOVERY (In)	GRAPHIC	nscs		Sample Collected and Confirmation Samp with Geotech (Grain Siz	ze, CEC, ORP, TOC)	SAMPLES	PID (ppm)	REMARKS		
0-			AS	ASPHALT surface	cover and subbase.				Soil sample collected at 1105		
- - -	60/60			trace gravel as above, dark gr	-brown, slightly moist ray, medium consister oning to light gray wit ning to gray with brow with depth	ncy		13	EIP-SS197A-000-1		
5-	00/00			as above, medium depth	i plasticity, moisture c	ontent increasing wit		10			
-								08	Soil sample collected at 1109 EIP-SS197A-008-1		
10-	60/60		CL	as above, high pla	sticity, silt content de	creasing.		08	Soil sample collected at 1116 EIP-SS197A-010-1		
15-	59/60			CLAY, gray, occas	sional brown spots, sc	oft, moist, high		10			
-				_	ay-brown, little gravel/ red staining, coarse g			17	Soil sample collected at 1128 EIP-SS197A-018-1		
20-	50/60			SANDY CLAY with	n gravel, very wet			17			
~				as above, sand co	entent increasing			15	Soil sample collected at 1145 EIP-SS197A-023-1		
25-	51/60	ASSESS OF THE SECOND	SP	SAND, brown, poo	orly graded, fine to me			17			
1			sw		asing with increasing			0 1	Soil sample and duplicate collected at 120 EIP-SS197A-028-1 and EIP-SS197A-028-		
30-	_60/60						\mathbb{W}	05			



LOG OF BORING EIP-SS197A

	J L	<i>(</i> 7,	ŊЦ			LOG OF B	ORII	NG E	:IP-SS19/A
Re	storin	g Re		DEUTIONS . ce Efficiency					(Page 2 of 2)
٧	Vork As Ells	signm worth	ent 251- Industri	al Action Contract -RICO-B52A al Park • County, Illinois	Start Date Finish Date Driller Drilling Method Sampling Method	1-4-07 1-4-07 Transhield Geoprobe Grab		Loc	tal Depth 34' bgs cation Precision Brand 2250 Curtiss ESTON Geologist J Hunter
DEPTH (ft)	RECOVERY (in)	GRAPHIC	nscs		Sample Collected and Confirmation Samp with Geotech (Grain Siz	ze, CEC, ORP, TOC)	SAMPLES	PID (ppm)	REMARKS
30-	48/48	/// ///	SW CL GW	CLAY pocket. SANDY GRAVEL, large cobble.		ome gravel, little	X	11	Soil sample collected at 1200 EIP-SS197A-030-1 Soil sample collected at 1227 EIP-SS197A-033-1
35-				END OF BORING	AT 34'				
- 40 - -									
45-							,		
50-			·						
55-									
60-									



LOG OF BORING EIP-SS197B I

(Page 1 of 2)

US EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A

Ellsworth Industrial Park Downers Grove, Du Page County, Illinois

11-16-2007 K \EPA\Ellsworth Industrial Park\2006-2007 Boring Logs\QC complete\SS197Bl bor

Start Date Finish Date

Drilling Method

Driller

1-5-07 1-5-07 **Total Depth** Location

45' bgs Precision Brand

Transhield Geoprobe/HSA

WESTON Geologist

2250 Curtiss J Hunter

Sampling Method Grab Samples Investigative Sample Collected RECOVERY (in) Investigative and Confirmation Sample Collected Investigative with Geotech (Grain Size, CEC, ORP, TOC)

MW-197 I

DEPTH (ft) SAMPLES GRAPHIC PID (ppm) nscs **REMARKS DESCRIPTION** - Flushmount BLIND DRILL from 0' to 35' No sample collected Concrete between 0'-35' 10-15 Grout 2" SS Riser 20. 25 30



LOG OF BORING EIP-SS197B I

(Page 2 of 2)

U.S. EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A

Ellsworth Industrial Park

1-5-07 Start Date Finish Date 1-5-07 Driller

Transhield Geoprobe/HSA Total Depth Location

45' bgs Precision Brand 2250 Curtiss

WESTON Geologist J Hunter

Drilling Method Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected RECOVERY (in) Investigative and Confirmation Sample Collected MW-197 I Investigative with Geotech (Grain Size, CEC, ORP, TOC) DEPTH (ft) GRAPHIC SAMPLES PID (ppm) uscs **REMARKS** DESCRIPTION 30 BLIND DRILL from 0' to 35'. Grout Bentonite Chips 2" SS Riser 35 SAND, brown, poorly graded, angular, moist to wet. 2" well graded sand seam, coarse grained. Soil sample and duplicate collected at 2" well graded sand seam, coarse grained. EIP-SS197B-038-1 and EIP-SS197B-038-2 29/60 40 as above, coarse grained, saturated. Sand Pack -0.010" Slot Screen 08 Soil sample collected at 1354 CLAYEY SAND, gray, saturated. EIP-SS97B-043-1 SP SAND, gray, poorly graded, saturated. 60/60 // CL SILTY CLAY, gray, moist, trace round pebbles 45 **END OF BORING AT 45'** Monitoring Well Developed 1/17/07 50

11-16-2007 K \EPA\Ellsworth Industrial Park\2006-2007 Boring Logs\QC complete\SS197BI bor

55

60



LOG OF BORING EIP-SS242 I

(Page 1 of 2)

U.S. EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A Ellsworth Industrial Park Downers Grove, Du Page County, Illinois					Start Date 1-18-07 Finish Date 1-18-07 Driller Transhield Drilling Method Geoprobe Sampling Method Grab				Total Depth Location WESTON Geo	55' bgs Fusibond 2615 Curtiss logist J Hunter	
DЕРТН (ft)	RECOVERY (in)	GRAPHIC	nscs	Investigative with Ger	Collected Infirmation Sample Collect otech (Grain Size, CEC,		SAMPLES	PID (ppm)	REMARKS	MW-242 I — Stick-up	
0-			тs	TOPSOIL, black, slightly n		gravel				Concrete	
5	54/60		CL				X	00	Soil sample collected at 0804 EIP-SS242-003-1		
5				CLAYEY GRAVEL, brown moist	, well graded, stiff, sli	ghtly		00	Soil sample collected at 0809		
10-	51/60		GC				X	02	Soil sample collected at 0813 EIP-SS242-010-1		
- - 15—	48/60			GRAVEL, tan, well graded sand	l, sub-angular, dry, tra	ace		00	Duplicate confirmation sample collected	2" SS Riser	
-							\bigvee	00	Soil sample collected at 0826 EIP-SS242-018-1		
20-	56/60		GW				\bigvee	00	Soil sample collected at 0833 EIP-SS242-020-1		
- 25-	60/60			as above, reddish brown, absent	dry to slightly moist, s	sand		02			
-	45/60			as above, slightly moist to 3" silty clay seam, slightly			X	00	Soil sample collected at 0843 EIP-SS242-028-1		



LOG OF BORING EIP-SS242 I

(Page 2 of 2) Restoring Resource Efficiency Start Date 1-18-07 Total Depth 55' bgs U.S. EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A Finish Date 1-18-07 Location Fusibond Transhield 2615 Curtiss Driller WESTON Geologist Ellsworth Industrial Park J Hunter **Drilling Method** Geoprobe Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected RECOVERY (in) Investigative and Confirmation Sample Collected MW-242 I Investigative with Geotech (Grain Size, CEC, ORP, TOC) DEPTH (ft) SAMPLES GRAPHIC PID (ppm) uscs **REMARKS DESCRIPTION** 30 CLAY, gray, medium consistency, slightly moist, plastic, trace round pebbles. Soil sample collected at 0906 EIP-SS242-033-1 60/60 35 Soil sample collected CL -Grout at 0946 GRAVELLY CLAY, brown, moist EIP-SS242-035-1 CLAY, gray, medium consistency, slightly moist, 2" SS Riser plastic, trace round pebbles. 0.0 58/60 Soil sample collected 40at 1020 EIP-SS242-040-1 SAND, brown, well graded, dry. SW Bentonite Chips 00 CLAY, gray, medium consistency, slightly moist, plastic, trace round pebbles 59/60 11-19-2007 K \EPA\Ellsworth industrial Park\2006-2007 Boring Logs\QC complete\SS242I bor No sample collected 45 NO RECOVERY from 45' to 50' from 45' to 50' NR NR Sand Pack 0/60 NR 0.010" Slot Screen 50 Geotech collected SAND, tan, poorly graded, medium grained, very moist from 50' to 55' SILTY CLAY, gray, moist, trace very fine grained sand Soil sample collected CL at 1202 EIP-SS242-053-1 SAND, gray, poorly graded, very fine grained, wet 58/60 55 END OF BORING AT 55' Monitoring Well Developed 1/25/07 60



as above, moist

36/60

30

LOG OF BORING EIP-SS257 I

Sand Pack

(Page 1 of 2) Start Date 1-24-07 Total Depth 45' bgs U.S. EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A Finish Date 1-25-07 Location Global Gear Driller Transhield 2500 Curtiss Ellsworth Industrial Park **Drilling Method** Geoprobe **WESTON Geologist** T Sundquist Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected RECOVERY (in) Investigative and Confirmation Sample Collected MW-257 I Investigative with Geotech (Grain Size, CEC, ORP, TOC) DEPTH (ft) SAMPLES GRAPHIC PID (ppm) USCS **REMARKS** DESCRIPTION Flushmount ASPHALT surface cover and subbase Soil sample collected at Concrete AS EIP-SS257-000-1 CLAYEY SAND, brown/red, coarse grained, soft, SC 02 slightly moist, crumbly, gravel SILTY CLAY, medium brown, medium consistency, slightly moist CLAYEY SAND/GRAVEL, red/brown, coarse grained. 60/60 00 Soil sample collected at soft, slightly moist, crumbly, cobbles 1139 No Recovery from 5' to 6 2' EIP-SS257-005-1 00 46/60 00 10 No Recovery from 10' to 11.4' Soil sample collected at 1143 EIP-SS257-010-1 Geotech collected from 10' to 15' at 1309 00 Grout 44/60 00 11-19-2007 K\EPA\Elisworth Industrial Park\2006-2007 Boring Logs\QC complete\SS257! bor 15 No Recovery from 15' to 17'. Soil sample collected at 2" SS Riser EIP-SS257-015-1 00 36/60 00 20-No Recovery from 20' to 21.4' Soil sample collected at 1202 EIP-SS257-020-1 0 0 44/60 0.0 25-No Recovery from 25' to 27' Soil sample collected at 1302 EIP-SS257-025-1 CLAYEY SAND/GRAVEL, light brown, coarse grained, Bentonite Chips 00 dry, crumbly, cobbles



LOG OF BORING FIR-SS257 I

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Re	estor	ng	Re	SOLUTIONS .						(Page 2 of 2)
\	Nork A	lsw	gnm orth	Remedial Action Contract ent 251-RICO-B52A Industrial Park Du Page County, Illinois	Start Date Finish Date Driller Drilling Method Sampling Method	1-24-07 1-25-07 Transhield Geoprobe Grab			Total Depth Location WESTON Geol	45' bgs Global Gear 2500 Curtiss ogist T Sundquist
DEPTH (ft)	RECOVERY (in)	GRAPHIC	nscs	Samples Investigative Sample Investigative and Con Investigative with Geo		ted	SAMPLES	PID (ppm)	REMARKS	MW-257 I
30~	41/60		NR GW	SAND/GRAVEL, light brow SANDY CLAY, gray, very moist	NO RECOVERY from 30' to 31 6' SAND/GRAVEL, light brown, coarse grained, wet SANDY CLAY, gray, very fine grained, very soft,					
35~	50/60		CL	No Recovery from 35' to 3 as above, trace pebbles	5.8'			01	Soil sample collected at 1334 EIP-SS257-038-1	Sand Pack 0 010" Slot Screen
45~	60/60			as above, medium consistence CLAY, gray, medium consistence pebbles END OF BORING AT 45' Monitoring Well Developed	istency, slightly moist	, few	X	12	Soil sample collected at 1403 EIP-SS257-043-1	
50~										
55~										



48/60

30

LOG OF BORING EIP-SS259 I

(Page 1 of 2) Restoring Resource Efficiency 1-25-07 Start Date Total Depth 45' bgs U.S. EPA Region V Remedial Action Contract Finish Date 1-25-07 Global Gear Work Assignment 251-RICO-B52A Location Driller Transhield 2500 Curtiss Ellsworth Industrial Park **Drilling Method** Geoprobe **WESTON Geologist** M Pihl Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected Ξ Investigative and Confirmation Sample Collected RECOVERY MW-259 I Investigative with Geotech (Grain Size, CEC, ORP, TOC) DEPTH (ft) SAMPLES GRAPHIC PID (ppm) nscs **REMARKS** DESCRIPTION - Flushmount ASPHALT surface cover and subbase Concrete SAND and GRAVEL, tan, dry, loose SP 0 1 Soil sample collected at EIP-SS259-003-1 SILTY CLAY, dark gray and black, soft, slightly moist, rubber-like odor 43/60 Soil sample and duplicate collected at 1008 EIP-SS259-005-1 CL and EIP-SS259-010-2 0.0 CLAYEY SAND, dark brown, slightly moist 49/60 00 10 Soil sample collected at SC 1014 EIP-SS259-010-1 Grout 00 SILTY SAND, tan and brown, fine to medium grained, lsм moist 2" SS Riser SAND and GRAVEL, brown and gray, loose, slightly 44/60 0.0 11-19-2007 K\EPA\Ellsworth Industnal Park\2006-2007 Borng Logs\QC complete\SS259l bor 15 Soil sample collected at 1020 EIP-SS259-015-1 SAND and GRAVEL, tan, fine to coarse grained, loose, 00 dry, some rust staining sw 48/60 0.0 20-Soil sample and duplicate collected at 1028 EIP-SS259-020-1 and EIP-SS259-020-2 0 0 SILTY SAND, brown, fine grained, saturated SM Bentonite Chips SW SAND, brown, fine to coarse grained, loose, moist 50/60 0.0 25. Soil sample collected at SILTY CLAY, brown and gray, soft, slightly moist 1044 CL EIP-SS259-025-1 Sand Pack SAND and GRAVEL, brown, loose, moist to wet, large 00 cobbles (1"-1 5") sw 0 010" Slot Screen



LOG OF BORING EIP-SS259 I

(Page 2 of 2) Restoring Resource Efficiency Start Date 1-25-07 **Total Depth** 45' bgs U.S. EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A Finish Date 1-25-07 Location Global Gear 2500 Curtiss Driller Transhield Ellsworth Industrial Park M. Pıhl **Drilling Method** WESTON Geologist Geoprobe Downers Grove, Du Page County, Illinois Grab Sampling Method Samples investigative Sample Collected RECOVERY (in) Investigative and Confirmation Sample Collected MW-259 I Investigative with Geotech (Grain Size, CEC, ORP, TOC) DEPTH (#) SAMPLES GRAPHIC PID (ppm) nscs **REMARKS** DESCRIPTION 30 SILTY SAND, brown, poorly graded, fine to medium Soil sample collected at grained, saturated. lsм EIP-SS259-030-1 Sand Pack 0.0 SAND, brown, well graded, fine to coarse grained, very loose, saturated, abundant gravel. 0 010" Slot Screen sw as above, stones (1"-1 5") 00 52/60 35 GRAVEL, brown, very loose, saturated, some coarse grained sand, large cobbles (>1 5") Soil sample collected at 1138 EIP-SS259-038-1 42/60 No sample collected 40 NO RECOVERY from 40' to 45'. from 40' to 45' NR 0/60 11-19-2007 K \EPA\Ellsworth Industnal Park\2006-2007 Bonng Logs\QC complete\SS259I bor 45 **END OF BORING AT 45'** Monitoring Well Developed 1/30/07 50 55 60



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LOG OF BORING EIP-SS260 I

(Page 1 of 2) Restoring Resource Efficiency Start Date 1-25-07 Total Depth 45' bgs US EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A Finish Date 1-25-07 Location Global Gear Driller Transhield 2500 Curtiss Ellsworth Industrial Park **Drilling Method** Geoprobe **WESTON Geologist** M Doheny-Skubic Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected Ξ Investigative and Confirmation Sample Collected RECOVERY MW-260 I Investigative with Geotech (Grain Size, CEC, ORP, TOC) DEPTH (ft) SAMPLES GRAPHIC PID (ppm) nscs **REMARKS DESCRIPTION** Flushmount ASPHALT surface cover and subbase AS Soil sample collected at Concrete SILTY CLAY, black, dry, some medium to coarse EIP-SS260-000-1 grained gravel. 60/60 02 5 SANDY CLAY, brown, dry, few fine to coarse grained Soil sample and gravel duplicate collected at 1335 EIP-SS260-005-1 0.2 1" sand and gravel lens 60/60 00 10 Soil sample collected at -SANDY CLAY, tan, rust staining, fine to coarse 1337 grained, dry, some medium grained gravel. EIP-SS260-010-1 0 5 3" gravel lens. Grout 2" gravel lens 2" SS Riser SILTY CLAY, brown, rust staining, hard, dry, trace 53/60 03 11-19-2007 K \EPA\Eilsworth Industrial Park\2006-2007 Boring Logs\QC complete\SS260I bor 15 Soil sample and gravel duplicate collected at 1340 EIP-SS260-015-1 and EIP-SS260-015-2 0 4 SAND, tan, fine to coarse grained, dry, little gravel. 50/60 0 1 20-Soil sample and duplicate collected at 1357 EIP-SS260-020-1 03 SP 42/60 0 1 25as above, some gravel Bentonite Chips 00 Soil sample collected at Sand Pack 1404 EIP-SS260-028-1 0 010" Slot Screen



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LOG OF BORING EIP-SS260 I

(Page 2 of 2) Start Date 1-25-07 **Total Depth** 45' bgs U.S. EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A Finish Date 1-25-07 Location Global Gear Driller Transhield 2500 Curtiss Ellsworth Industrial Park Drilling Method Geoprobe WESTON Geologist M Doheny-Skubic Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected RECOVERY (III) Investigative and Confirmation Sample Collected MW-260 I Investigative with Geotech (Grain Size, CEC, ORP, TOC) DEPTH (ft) SAMPLES PID (ppm) GRAPHIC SSS **REMARKS** DESCRIPTION 30 NO RECOVERY from 30' to 32 5' NR Soil sample collected at SANDY GRAVEL, tan, well graded, subrounded to 1413 rounded, loose, wet. EIP-SS260-033-1 Sand Pack Soil sample collected at 0 010" Slot Screen 30/60 35 as above, fine to coarse grained. 1438 EIP-SS260-035-1 PID battery ran out, no field screening from 35' to EOB Soil sample collected at 1438 EIP-SS260-038-1 33/60 Soil sample collected at 40 SILTY CLAY, gray, soft, slightly moist, trace rounded 1508 pebbles. EIP-SS260-040-1 Soil sample collected at 1508 EIP-SS260-043-1 11-19-2007 K \EPA\Ellsworth Industrial Park\2006-2007 Bonng Logs\QC complete\SS260I bor 30/60 45 **END OF BORING AT 45'** Monitoring Well Developed 1/30/07 50 55



LOG OF BORING EIP-SS272 I

(Page 1 of 2)

U.S. EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A

11-19-2007 K \EPA\Elisworth Industrial Park\2006-2007 Bonng Logs\QC complete\SS272I bor

Start Date 1-30-07 Finish Date 1-31-07 Total Depth Location

51' bgs Arrow Gear

Work Assignment 251-RICO-B52A			ent 251-RICO-B52A	Driller Transhield				Location	Arrow Gear	
	FI	leva//	orth	Industrial Park	Drilling Method Geoprobe				WESTON Geole	2301 Curtiss ogist J Hunter
Dow				u Page County, Illinois	Sampling Method	Grab			WESTON GEOR	ogist 3 nanter
204				Samples						
	<u>~</u>			Investigative Sample						
	RECOVERY (in)				firmation Sample Colle					
æ	<u>8</u>	$_{\rm O}$		Investigative with Geo	otech (Grain Size, CEC	, ORP, TOC)	Ø	اج ا		MW-272 I
Ĭ	<u> </u>	ĬĬ	ا ا			}	<u>"</u>	ם		
DЕРТН (ft)	8	GRAPHIC	ပ္သ				SAMPLES	PID (ppm)	REMARKS	
딤	묎	R.	nscs	DESC	CRIPTION		δA	∃		04!-1
0-		_								Stick-up
)	18	TOPSOIL, brown	_					— Concrete
-				SILTY CLAY, dark brown,	soft, dry, trace angu	ılar				5 5
_			CL	gravel.				00		
							\vdash	ات	Soil sample and	
_				ORGANIC SOIL, black, so	oft, dry, silty		IVI		duplicate collected at 0805	
-			OL			l	ΙΛI		EIP-SS272-003-1 and	
5-	52/60						\square	00	EIP-SS272-003-2	
ŭ				SILTY CLAY, black, soft, o	' - '					
-				as above, gradually transit	tioning to brown.					
_								0 2		
			CL	SANDY CLAY, brown, slig	htly moist, trace sma	all	\bowtie	0 2	Soil sample collected	
				gravel			IVI		at 0810 EIP-SS27-008-1	
1				as above, sand (medium g	rained) content is in	creasing.	IΛI		Shelby tube collected	
10-	57/60						μ	0 5	from 9' to 11 5'	
		$\frac{4}{2}$		CLAYEY SAND, brown, m	edium grained mois	st trace		ļ	,	
		2		small gravel, clay content						
-							1	00	 	
_				•			\square		Soil sample collected at 0819	O" CC Broom
			cc.				IJΙ		EIP-SS272-013-1	2" SS Riser
-	40,00	1	\$C				$\ /\ $			Grout
15-	42/60	11		as above, wet.			\vdash	0 4	ļ ·	1:11:1
_		11								
		12					1			
		//	أبي		,			0 1	Soil sample collected	
-			ŞP	SAND, brown, poorly grad	ed, medium grained	, wet	Λ		at 0833	
-		333					X		EIP-SS272-018-1	
00	41/60		SC	GRAVEL, brown, well grad	ded, wet, trace sand		ΙV	0 1		
20 –				CLATET SAND, Brown, m	DIST.				Soil sample collected at 0851	
-			CL	SILTY CLAY, gray, mediui small gravel	m consistency, mois	t, trace	[:::]		EIP-SS272-020-1	
		\angle	oxdot					0.0	Geotech collected from 20'-25' at 0931	
			sw	CLAYEY SAND, brown, w gravel.	ell graded, wet, trace	e	استنا	0 0	#OH 20-20 81 0501	
1			ĞΨ	GRAVEL, brown, well grad	ned saturated					
-		i i i i i i i i i i i i i i i i i i i	SP	SAND, gray, poorly grade						
25-	57/60	برزا					Ш	00		
				SILTY CLAY, gray, soft, m	oist, trace small gra	vel.				
7				SAND SEAM, gray, well g	raded, verv moist, tra	ace				
-			CL	gravel.				0 0		
_							$ \Box $		Soil sample collected at 0912	
_							V		EIP-SS272-028-1	
_				CLAYEY SAND, brown, m			$\ \Lambda\ $			
								00		



LOG OF BORING EIP-SS272 I

(Page 2 of 2) Restoring Resource Efficiency Start Date 1-30-07 Total Depth 51' bgs U.S EPA Region V Remedial Action Contract Work Assignment 251-RICO-B52A Finish Date 1-31-07 Location Arrow Gear Transhield 2301 Curtiss Driller Ellsworth Industrial Park Geoprobe **WESTON Geologist** J Hunter **Drilling Method** Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected RECOVERY (in) Investigative and Confirmation Sample Collected MW-272 I investigative with Geotech (Grain Size, CEC, ORP, TOC) DEPTH (ft) SAMPLES GRAPHIC PID (ppm) uscs REMARKS **DESCRIPTION** 30 SAND, tan, well graded, medium grained, wet, trace of Soil sample collected at 0942 EIP-SS272-030-1 Grout 0.4 SAND, tan, poorly graded, medium grained, slightly moist 2" SS Riser SAND, tan, well graded, medium grained, slightly moist. 00 42/60 35 CLAYEY SAND, brown, slightly moist. SILTY CLAY, gray, moist, trace gravel Bentonite Chips SANDY SILT, gray, wet, very fine grained sand 00 Soil sample collected at 1010 EIP-SS272-038-1 SILTY CLAY, gray, moist. CL 51/60 00 SAND, tan, well graded, medium grained, very moist, 40 GW\trace gravel. -0 010" Slot Screen GRAVEL, tan, well graded, moist. SAND, light brown, well graded, moist. 0 1 Soil sample collected SAND, light brown, poorly graded, very moist, trace at 1056 EIP-SS272-043-1 CLAYEY SAND, gray-tan, moist, trace gravel Sand Pack SM SILTY SAND, gray, well graded, fine grained, moist, 46/60 11-19-2007 K \EPA\Elisworth Industrial Park\2006-2007 Boring Logs\QC complete\SS272\ bor 45 Soil sample collected trace gravel. at 1125 SAND, gray, well graded, medium grained, very moist. EIP-SS272-045-1 sw GRAVEL, gray, well graded, saturated SAND with clay, gray, well graded, trace large gravel 41/60 50-No sample collected GRAVEL with clay, well graded, angular, very moist 5/12 **END OF BORING AT 51'** Monitoring Well Developed 2/9/07 55 60



LOG OF BORING EIP-SS273 I

Re	estor		ي	SOLUTIONS, source Efficiency			•		711110 211 001	(Page 1 of 2)
US E	EPA Re Work A	egior Assig	V F	Remedial Action Contract ent 251-RICO-B52A Industrial Park u Page County, Illinois	Start Date Finish Date Driller Drilling Method Sampling Method	1-30-07 1-30-07 Transhield Geoprobe Grab			Total Depth Location WESTON Geol	50' bgs Arrow Gear 2301 Curtiss logist J Hunter
DEPTH (ft)	RECOVERY (in)	GRAPHIC	nscs	Investigative with Geo	Collected firmation Sample Collectech (Grain Size, CEC,		SAMPLES	PID (ppm)	REMARKS	MW-273 I Flush Mount
0- - - - - 5-	41/60	7	AS GU CL	ASPHALT surface cover. GRAVEL, light gray, well g CLAY, dark brown. CLAYEY GRAVEL with sa		, dry.		15	Soil sample collected at 1315 EIP-SS273-000-1 Soil sample and	— Concrete
- 10-	38/60		€W	SILTY CLAY, gray, stiff, di	y, trace gravel.			10	duplicate collected at 1321 EIP-SS273-005-1 and EIP-SS273-005-2 Soil sample collected at 1327	
15	58/60		CL	as above, plastic, moisture SLOUGH from 15' to 15 6'	•		X	23	Soil sample collected at 1346 EIP-SS273-015-1	2" SS Riser —Grout
20-	53/60		SP	SAND, brown, poorly grad gravel near 20' SAND CLAY SEAM, gray. GRAVEL, tan, well graded				08		
15	48/60	3.2.2.2.3	GW CL	SANDY CLAY with silt, graggravel			X	33	Soil sample collected at 1358 EIP-SS273-023-1 Soil sample collected at 1416 EIP-SS273-025-1	
30-	56/60							0 4	33333	



LOG OF BORING EIP-SS273 I

(Page 2 of 2) Restoring Resource Efficiency 1-30-07 Start Date Total Depth 50' bgs U S. EPA Region V Remedial Action Contract 1-30-07 Arrow Gear Work Assignment 251-RICO-B52A Finish Date Location Driller Transhield 2301 Curtiss Ellsworth Industrial Park **Drilling Method** Geoprobe WESTON Geologist J Hunter Downers Grove, Du Page County, Illinois Sampling Method Grab Samples Investigative Sample Collected RECOVERY (in) Investigative and Confirmation Sample Collected MW-273 I Investigative with Geotech (Grain Size, CEC, ORP, TOC) DEPTH (ft) SAMPLES GRAPHIC PID (ppm) uscs REMARKS DESCRIPTION 30 SAND, tan, well graded, dry, trace angular/large Grout CLAYEY SAND, tan, slightly moist. Soil sample collected at 1447 2" SS Riser EIP-SS273-033-1 39/60 35. Soil sample collected at SANDY SILT, tan, fine grained, wet 1509 seams of wet, small, angular gravel throughout. EIP-SS273-035-1 -Bentonite Chips 08 ML 55/60 0 1 40 Soil sample collected at CLAYEY SAND, gray, poorly graded, fine grained, very 1538 moist, slightly plastic. SP EIP-SS273-040-1 -0.010" Slot Screen 37 GRAVEL, gray, well graded, wet, trace clay. ЮW Sand Pack 11-19-2007 K \EPA\Ellsworth Industnal Park\2006-2007 Bonng Logs\QC complete\SS273I bor 40/60 45 Soil sample collected at GRAVEL with sand, tan, well graded, wet GRAVEL with clay, tan, well graded, wet EIP-SS273-045-1 08 21/60 50 END OF BORING AT 50' Monitoring Well Developed 2/12/07 55

ATTACHMENT D GEOLOGIC CROSS SECTIONS

